Erosion and Sedimentation Control Plan

Purpose The purpose of an erosion and sedimentation control plan is to define and schedule the control measures that will be used to minimize erosion, detain excess stormwater runoff and prevent off-site sedimentation. A detailed site map displays the location of each practice (see sample map in Appendix A).

The Plan The plan should serve as a blueprint for the location, installation and maintenance of practices to control all anticipated erosion, and prevent sediment and increased runoff from leaving the site.

The Process **Select** a land site that has desirable natural drainage and soils with good potential for the intended development. Detailed soil surveys and geological investigations should be made to assess the suitability for the intended development.

Designate areas on the site map with severe limitations such as floodplains, steep slopes, drainageways, existing bodies of water and unstable soils to be left undisturbed and used as open space.

Designate natural vegetation and trees to be left undisturbed during construction. Existing areas of grass, shrubs and trees help to control soil erosion while enhancing the attractiveness of the project.

Design the development plan to the site so that minimum earth grading and other site preparation is required. Plan rough grading in phases to keep disturbed areas small and bare of vegetation for the shortest period of time.

Plan for the installation of best management practices (see *Practice Installation and Maintenance* section) to control overland sheet flow, limit erosion, keep sediment on the site and dispose of increased stormwater runoff caused by the increase in impervious surfaces. Plan for early use of the storm drainage structures by installing protection for stormwater inlets.

Stockpile topsoil, protect it from erosion and later spread it over the areas to be permanently vegetated.

Plan for inspection and maintenance when designing permanent erosion control structures and practices; and for removal of temporary measures. Consider maintenance of subdivision common areas in the planning process. Specifying slopes that are 4:1 or flatter and selecting low maintenance practices will reduce the risk of poor maintenance and resulting structural failures.

Developing The Plan

Determine Grading Limits

Grading limits are shown by outlining on the site map all areas where soil will be disturbed or vegetative cover removed. These areas will require one or more temporary or permanent soil stabilization measures. Outline areas to be left undisturbed and the locations of protective fencing.

Determine Drainage Areas

Outline all separate drainage areas that occur on the site. Stormwater draining onto the site from adjacent properties must be included. Identify all locations where stormwater is discharged off the development site.

Select Specific Control Measures

Three areas of concern should be evaluated for each drainage area: soil stabilization, runoff control and sediment control. Specific practices to control these areas are described in *Practice Installation and Maintenance*. As control measures are selected, identification symbols and a symbol legend should be placed on the site map. Drawings and specifications for all structural practices and vegetation specifications should be included in the plan.

Schedule Construction Activities

The three main items required are a construction schedule, a seeding schedule and an inspection and maintenance schedule.

The **construction schedule** explains in an orderly fashion what will occur from first to last. The sequence of control practices and struc-

tures installation is a critical factor in controlling erosion and sedimentation on the construction site.

Phasing of site grading is an important element of the schedule. Sediment basins, diversions and conveyance systems, whether temporary or permanent, should be installed before grading begins or very early in the rough grading process. The sequence of rough grading and temporary stabilization should be indicated for each area to be graded.

The schedule should indicate the control practices to be used if grading is suspended for an extended period of time (30 days or more). In areas without sediment traps, temporary structures to divert water from cut and fill slopes, temporary seeding with mulch, tackified mulch or other practices should be used to stabilize the exposed soil surface.

After final grading of each area is completed, the planned times and practices, usually vegetation or mulch, for stabilizing the soil surface should be indicated.

The **seeding schedule** shows the allowable times when seeding, sodding or mulching must be done for successful vegetation establishment and soil protection (See *Temporary* and *Permanent Seeding*). An example is shown in Table 3.1. It should identify the plant species or variety, seeding dates and seeding rates. If alternate species or times are listed, this chart can be used to schedule soil surface protection activities even if the planned construction schedule falls behind. Areas to be seeded and phasing with the grading schedule should be a part of the construction schedule.

Table 3.1 Example of a Seeding Schedule

Stabilization Type	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Permanent Seeding with Mulch Turf fescue: 80 lbs/acre	▒	▒	▒	▒	▒		▒	▒
Temporary Seeding with Mulch Annual Ryegrass: 75 lbs/acre	▒	▒	▒		▒	▒	▒	
Mulch with Tackifier (no seed)				▒	▒			
Fescue or Zoysia Sodding *				▒	▒			

Table Key

Optimum Seeding Times	▒
Acceptable Seeding Times	▒

*Ground must be moistened to cool soil temperatures before sod is laid. Use only fresh, good quality sod. Irrigate to soil depth of 4 inches immediately after installation and for the first 4 weeks, or until sod is well established.

The example Seeding Schedule in Table 3.1 provides for permanent stabilization with fescue after final grading is scheduled to be completed.

It also provides for temporary stabilization with annual ryegrass or tackified mulch, if grading is unexpectedly suspended and a permanent seeding cannot be established (i.e., in June and July). Finally, it gives the site manager a choice of fescue seeding or sodding during June and July to permanently stabilize sites as housing construction is completed.

The **inspection and maintenance schedule** is a plan for inspection and maintenance for all temporary and permanent erosion, sediment and stormwater control measures. This written plan should specify the inspection programs. It should also include the work materials and equipment to be used. Indicate who is responsible, and when inspections and maintenance will be provided.

Follow-up inspections immediately after each phase of construction and storm event, as well as periodic inspection and maintenance, are necessary to assure the proper functioning of the control measures. Schedule inspections after every rain that produces runoff for practices that detain or store water, practices that convey water and for any structures. Work time should be allowed for in the schedule to make repairs to damaged areas immediately.

Schedule inspection and maintenance of structures such as sediment basins and ponds that require cleaning out on a regular basis in order to remain effective.

The use of vegetation for erosion control purposes also requires a regularly scheduled maintenance program. A follow-up maintenance program includes repair of seeded, sodded or other vegetated areas where the desired degree of stabilization has not been achieved. Check all seedings for plant emergence and density 2 to 6 weeks after planting. Spring plantings should be inspected again during the summer or early fall so reseeding can be performed as necessary during the fall planting season.

Making the Plan Work

Even the best erosion and sediment control plan cannot cover the specifics of each situation that will arise on a construction site during the life of a project. It is the contractor's or site operator's responsibility to make sure that the site complies with the goals or intent of the sediment and erosion control plan at all times. The plan will typically show the practices that are to be in place at the start of construction. One person's error can cause considerable damage and regulatory noncompliance.

For more information on making the plan work, see *Interpreting Site Designs.*

Additional Resources

For a more comprehensive procedure, refer to the Erosion and Sediment Control section of the *Urban Conservation Policy Handbook.* Contact your local soil and water conservation district for sources of this book.